

Table 2-1
Summary of Nitrate Trend Analyses - Port of Morrow Farm 1
Trend Analysis of Food Processing Land Application Sites in the LUBGWMA

Sample Location	Data Set Statistics									Trend Analysis Results		Trend Direction	LOWESS Pattern
	Starting Date	Ending Date	Min	Max	Mean	Median	Skewness	n	% BDL	Slope (ppm/yr)	C.L.		
MW-1	Jun-87	Sep-01	11.2	42.6	22.7	20.1	1.21	57	0%	0.21	< 80%	No Significant Trend	Increasing with some fluctuations
MW-2	Jun-87	Sep-01	4.81	47.0	25.3	24.7	0.14	52	0%	1.65	99%	Increasing	Increasing then decreasing
MW-3	Jun-87	Sep-01	0.07	95.4	19.5	3.9	1.18	59	0%	2.65	99%	Increasing	Flat then increasing
MW-4	Jun-87	Sep-01	0.15	43.2	9.4	3.6	1.17	57	1.8%	0.31	90%	Increasing	Increasing then decreasing
MW-5	Jun-87	Sep-01	6.98	36.0	22.4	22.6	-0.05	55	0%	0.67	99%	Increasing	Increasing then decreasing
MW-6	Jun-87	Jun-00	0.15	9.7	0.8	0.5	5.16	51	20%	-0.02	80%	Decreasing	Decreasing then increasing
MW-7	Oct-91	Sep-01	9.75	29.2	14.6	13.9	1.43	41	0%	0.41	90%	Increasing	Decreasing then increasing
MW-8	Oct-91	Sep-01	6.48	54.5	34.0	36.2	-0.41	41	0%	2.48	99%	Increasing	Increasing then decreasing
MW-9	Oct-91	Sep-01	5.2	33.1	18.1	18.2	0.45	41	0%	1.41	99%	Increasing	Increasing
MW-10	Oct-91	Sep-01	11.5	40.1	24.7	23.9	0.26	41	0%	1.51	99%	Increasing	Increasing then leveling off
MW-11	Oct-91	Sep-01	5.35	47.0	27.9	27.9	0.09	42	0%	2.24	99%	Increasing	Increasing
MW-SP1	Apr-95	Sep-01	31.4	53.6	37.9	36.8	1.42	23	0%	0.67	< 80%	No Significant Trend	Increasing then decreasing
MW-SP2	Apr-95	Sep-01	32.6	49.9	41.5	39.7	0.16	23	0%	-0.25	< 80%	No Significant Trend	Fluctuating

# of Increasing Trends ==>	9
# of Decreasing Trends ==>	1
# of Flat Trends ==>	0
# of Statistically Insignificant Trends ==>	3
Average slope of significant trends (ppm/yr) ==>	1.33
Average slope of all trends (ppm/yr) ==>	1.07

Notes:

Min = minimum, Max = maximum, n = number of samples
BDL = below detection limit, C.L. = confidence level

Table 2-2
Summary of Nitrate Trend Analyses - Port of Morrow Farm 2
Trend Analysis of Food Processing Land Application Sites in the LUBGWMA

Sample Location	Data Set Statistics									Trend Analysis Results		Trend Direction	LOWESS Pattern
	Starting Date	Ending Date	Min	Max	Mean	Median	Skewness	n	% BDL	Slope (ppm/yr)	C.L.		
MW-12	Dec-91	Sep-01	13	45.4	30.0	31.0	-0.20	40	0%	1.63	99%	Increasing	Increasing
MW-13	Dec-91	Sep-01	16.8	61.6	43.6	45.9	-0.62	39	0%	2.73	99%	Increasing	Increasing
MW-14	Dec-91	Sep-01	0.02	45.2	27.8	32.5	-0.53	40	0%	3.59	99%	Increasing	Increasing then starts leveling off
MW-14s	Jan-95	Sep-01	8.12	49.2	36.6	39.5	-1.57	22	0%	2.27	80%	Increasing	Increasing then levels off
MW-15	Dec-91	Sep-01	9.7	55.9	36.3	38.6	-0.46	40	0%	2.69	99%	Increasing	Increasing
MW-15s	Jan-95	Sep-01	15.5	55.2	38.6	39.5	-0.93	21	0%	3.85	99%	Increasing	Increasing with some fluctuations
MW-16	Dec-91	Sep-01	6.06	58.3	44.9	50.4	-1.34	39	0%	2.63	99%	Increasing	Increasing then levels off
MW-17	Dec-91	Sep-01	5.89	53.4	39.2	43.2	-1.21	40	0%	2.32	99%	Increasing	Increasing then levels off
MW-18	Dec-91	Sep-01	0.03	14.4	5.6	5.2	0.80	40	0%	0.89	99%	Increasing	Increasing

# of Increasing Trends ==>	9
# of Decreasing Trends ==>	0
# of Flat Trends ==>	0
# of Statistically Insignificant Trends ==>	0
Average slope of significant trends (ppm/yr) ==>	2.51
Average slope of all trends (ppm/yr) ==>	2.51

Notes:

Min = minimum, Max = maximum, n = number of samples

BDL = below detection limit, C.L. = confidence level

E:\LUB\LandApp\All Trends.xls\ POM Farm2

**Table 3-1
Summary of Nitrate Trend Analyses - Lamb-Weston North Farm
Trend Analysis of Food Processing Land Application Sites in the LUBGWMA**

Sample Location	Data Set Statistics									Trend Analysis Results		Trend Direction	LOWESS Pattern
	Starting Date	Ending Date	Min	Max	Mean	Median	Skewness	n	% BDL	Slope (ppm/yr)	C.L.		
MW-1	Oct-95	Nov-01	8.4	56.6	19.5	17.3	2.25	24	0%	0.43	< 80%	No Significant Trend	Increasing then decreasing then leveling off
MW-2	Oct-95	Nov-01	15.1	21	18.0	18.2	-0.15	24	0%	0.31	99%	Increasing	Increasing
MW-3	Oct-95	Nov-01	7.9	50.4	10.7	8.8	4.59	25	0%	-0.33	99%	Decreasing	Decreasing
MW-4	Oct-95	Nov-01	20.6	27.1	24.7	25.1	-1.03	25	0%	0.76	99%	Increasing	Increasing steeply then less steeply
MW-5	Oct-95	Nov-01	19.4	28.4	25.3	26.0	-0.89	25	0%	0.30	< 80%	No Significant Trend	Increasing steeply then less steeply
MW-6	Oct-95	Nov-01	3.09	8.14	4.8	4.5	0.68	25	0%	0.60	99%	Increasing	Increasing
MW-7	Oct-95	Nov-01	11.4	55.8	35.8	39.1	-0.31	25	0%	6.93	99%	Increasing	Increasing steeply then less steeply
MW-8	Oct-95	Nov-01	7.9	70.4	49.8	50.1	-1.35	25	0%	1.66	< 80%	No Significant Trend	Increasing then decreasing
MW-9	Oct-95	Nov-01	6.22	8.14	7.2	7.1	0.27	25	0%	-0.03	80%	Decreasing	Increasing then decreasing
MW-10	Jan-96	Nov-01	9.1	64.7	46.6	49.1	-2.16	23	0%	0.78	80%	Increasing	Increasing then decreasing
# of Increasing Trends ==>										5			
# of Decreasing Trends ==>										2			
# of Flat Trends ==>										0			
# of Statistically Insignificant Trends ==>										3			
Average slope of significant trends (ppm/yr) ==>										1.45			
Average slope of all trends (ppm/yr) ==>										1.14			

Notes:

Min = minimum, Max = maximum, n = number of samples

BDL = below detection limit, C.L. = confidence level

Table 3-2
 Summary of Madison Ranch Well Hydrographs
 Trend Analysis of Food Processor Land Application Sites in the LUBGWMA

Criteria	Flood Plain Wells	Upland Wells	Well Near Lost Lake	Wells Near Canal
Wells	MW-5, 6, 10, 11, & 12	MW-2, 7, & 8	MW-3	MW-4A & 9
Water Level Highs	Apr/May (except MW-6 where it's Aug) (water levels typically measured in Feb, May, Aug, & Nov)	Variable: MW-2 = no pattern MW-7 = steady increase MW-8 = May	Oct/Nov	Aug
Water Level Lows	Oct/Nov	Variable: MW-2 = no pattern MW-7 = steady increase MW-8 = Oct/Nov	April	Jan/Feb to April
Median Annual Fluctuation (ft)	MW-5 = 2.9' MW-6 = 2.5' MW-10 = 4.3' MW-11 = 1.5' MW-12 = 8.6' (nearby irrigation ditch is a strong influence)	MW-2 = 4.1' MW-7 = steady 1.2' increase MW-8 = 1.0	1.2'	MW-4A = 2.8' MW-9 = 2.6'
Inferred Influence on Water Levels	Spring runoff down Butter Creek flood plain, and leaky canals and ditches (MW-6 may also be affected by a flood irrigated field to the SW and/or irrigation east of flood plain)	Local deep percolation of precipitation and irrigation of circles	Delayed influence from leakage from Lost Lake and/or subsurface drainage down Fourmile Canyon	Leakage from Highline Canal

Table 3-3
Summary of Nitrate Trend Analyses - Lamb-Weston Madison Ranch
Trend Analysis of Food Processing Land Application Sites in the LUBGWMA

Sample Location	Data Set Statistics									Trend Analysis Results		Trend Direction	LOWESS Pattern
	Starting Date	Ending Date	Min	Max	Mean	Median	Skewness	n	% BDL	Slope (ppm/yr)	C.L.		
MW-1	Jan-96	Apr-00	2.93	7.44	5.9	6.4	-1.29	7	0%	-0.14	< 80%	No Significant Trend	Increasing then decreasing
MW-2	Oct-95	Nov-01	0.05	0.45	0.2	0.2	1.12	20	0%	0.01	95%	Increasing	Increasing
MW-3	Jan-96	Nov-01	2.68	13.2	3.6	3.1	4.43	23	0%	0.05	95%	Increasing	Increasing
MW-4	Nov-95	Nov-01	0.06	1.11	0.9	0.9	-2.34	24	0%	0.05	90%	Increasing	Increasing
MW-5	Oct-95	Nov-01	6.24	26.1	9.7	8.5	3.03	24	0%	-0.32	< 80%	No Significant Trend	Increasing then decreasing
MW-6	Oct-95	Nov-01	0.97	40.9	19.3	18.0	0.41	24	0%	3.16	99%	Increasing	Increasing
MW-7	Oct-95	Nov-01	0.01	0.48	0.4	0.4	-3.82	24	0%	0.00	< 80%	No Significant Trend	Increasing then decreasing
MW-8	Oct-95	Nov-01	0.26	5.06	4.4	4.7	-3.17	24	0%	0.24	99%	Increasing	Increasing steeply then less steeply
MW-9	Oct-95	Nov-01	0.01	3.2	0.8	0.7	3.54	24	0%	0.04	95%	Increasing	Decreasing slightly then increasing slightly
MW-10	Oct-95	Nov-01	1.11	14.3	7.8	7.9	0.03	24	0%	-0.68	< 80%	No Significant Trend	Increasing then decreasing
MW-11	Oct-95	Nov-01	0.63	25.5	8.3	8.1	2.99	25	0%	0.05	< 80%	No Significant Trend	Increasing then decreasing
MW-12	Oct-95	Aug-01	0.27	9.26	5.4	5.0	-0.07	23	0%	1.03	99%	Increasing	Increasing

# of Increasing Trends ==>	7
# of Decreasing Trends ==>	0
# of Flat Trends ==>	0
# of Statistically Insignificant Trends ==>	5
Average slope of significant trends (ppm/yr) ==>	0.47
Average slope of all trends (ppm/yr) ==>	0.29

Notes:

Min = minimum, Max = maximum, n = number of samples
 BDL = below detection limit, C.L. = confidence level

Table 4-1
Distinguishing Alluvial vs Flood Plain Wells Near Simplot Plant Site
Trend Analysis of Food Processor Land Application Sites in the LUBGWMA

Criteria	Alluvial Wells	Flood Plain Wells	Comment
<i>Example wells</i>	MW-10s, 11s, 12, 13s, 38, 46, 47, 48, 53, 56, 57, 58, and 59	MW-16, 17, 18, 19, 20, 21, 45, 49, & 50	
<i>Typical Water Level</i>	Approximately 500'	Approximately 540'	Consistent 40' difference between flood plain wells and alluvial wells on bench
<i>Water Level Highs</i>	August and/or November (Water levels are measured in Feb, May, Aug, & Nov)	February and/or May (except MW-49 where it's Feb & Nov)	Timing of Highs and Lows reflect: <ul style="list-style-type: none"> • influence of irrigation on Alluvial wells, and • influence of the River on flood plain wells
<i>Water Level Lows</i>	February and/or May	August and/or November (except MW-49 where it's May & Aug)	
<i>Typical lithology</i>	Finer grained sediments (e.g., silty sands)	Coarser grained sediments (sand and gravel)	Transition from finer to coarser grained sediments could cause clustering of water level contours at base of alluvial bench
<i>May 2002 TDS</i>	372 to 1140 mg/l; median = 602	146 to 630 mg/l; median = 409 river = 88 to 108	TDS values in the flood plain wells are lower (closer to River TDS values) than alluvial wells, and generally increase away from the River reflecting influence of river on groundwater quality
<i>Oct 2002 TDS</i>	294 to 1080 mg/l; median = 644	162 to 638 mg/l; median = 384 river = 90 to 112	

Table 4-2
Summary of Nitrate Trend Analyses - Simplot Plant Site
Trend Analysis of Food Processing Land Application Sites in the LUBGWMA

Sample Location	Data Set Statistics									Trend Analysis Results		Trend Direction	LOWESS Pattern
	Starting Date	Ending Date	Min	Max	Mean	Median	Skewness	n	% BDL	Slope (ppm/yr)	C.L.		
MW-10S	Feb-92	Nov-01	0.5	13.9	2.7	0.5	1.618	39	59%	0.00	< 80%	No Significant Trend	Increasing then decreasing
MW-10D	Feb-92	Nov-01	0.5	4.9	0.7	0.5	5.268	39	82%	0.00	< 80%	No Significant Trend	Flat
MW-11S	Feb-88	Nov-01	7.2	18.0	11.8	11.5	0.284	52	0%	-0.14	80%	Decreasing	Decreasing, then increasing, then decreasing again
MW-11D	Feb-88	Nov-01	0.5	2.4	0.8	0.8	2.241	52	23%	0.00	< 80%	No Significant Trend	Flat with minor fluctuations
MW-12	Feb-88	Nov-01	12.7	39.2	20.6	19.8	1.235	52	0%	0.10	< 80%	No Significant Trend	Decreasing, then increasing, then decreasing again
MW-13S	Nov-88	Nov-01	8.9	53.0	15.7	13.4	3.035	53	0%	-0.13	< 80%	No Significant Trend	Nearly flat
MW-13D	Nov-88	Nov-01	0.4	3.3	1.7	1.6	0.865	52	0%	0.01	< 80%	No Significant Trend	Nearly flat
MW-16	Nov-88	Nov-01	0.5	100	19.8	8.5	1.383	53	26%	-2.39	99%	Decreasing	Increasing then decreasing
MW-17	Nov-88	Nov-01	0.5	31.4	1.3	0.5	6.449	52	81%	0.00	< 80%	No Significant Trend	Flat
MW-18	Nov-88	May-96	0.5	99.3	8.2	2.6	4.559	31	29%	0.22	80%	Increasing	Increasing then decreasing
MW-19	Nov-88	Nov-01	0.5	1.9	0.6	0.5	3.228	52	87%	0.00	< 80%	No Significant Trend	Flat
MW-20	Nov-88	Nov-01	2.1	43.3	16.4	14.6	0.647	53	0%	-1.50	99%	Decreasing	Decreasing
MW-21	Nov-88	Nov-01	0.5	8.9	1.3	0.5	2.648	53	75%	0.00	99%	Flat	Nearly flat
MW-45	Feb-92	Nov-01	0.5	48.3	13.2	6.1	1.211	39	10%	-2.92	99%	Decreasing	Decreasing
MW-46	Feb-96	Nov-01	5.1	11.1	8.2	8.6	-0.312	20	0%	-0.13	< 80%	No Significant Trend	Decreasing then increasing
MW-47	Feb-96	Nov-01	12.0	28.3	18.1	16.6	0.655	24	0%	1.52	95%	Increasing	Increasing then decreasing
MW-48	Feb-96	Nov-01	30.5	45.8	39.1	40.4	-0.324	24	0%	-0.38	< 80%	No Significant Trend	Increasing then decreasing
MW-49	Feb-96	Nov-01	0.5	1.2	0.6	0.5	1.457	24	75%	0.00	80%	Flat	Nearly flat
MW-50	Feb-96	Nov-01	0.5	1.3	0.6	0.5	1.372	24	75%	0.00	95%	Flat	Nearly flat
MW-56	Feb-96	Nov-01	0.5	31.8	9.0	8.2	1.858	21	5%	0.40	80%	Increasing	Decreasing, then increasing, then leveling off
MW-57	Feb-96	Nov-01	1.0	17.7	7.8	7.0	0.843	24	0%	-0.26	< 80%	No Significant Trend	Increasing then decreasing
MW-58	May-96	Nov-01	0.5	16.9	9.1	9.5	-0.114	23	22%	-0.50	< 80%	No Significant Trend	Decreasing then increasing
MW-59	Aug-96	Nov-01	0.5	1.0	0.6	0.5	2.119	22	86%	0.00	< 80%	No Significant Trend	Flat
# of Increasing Trends (onsite wells only) ==>										2			
# of Decreasing Trends (onsite wells only) ==>										4			
# of Flat Trends (onsite wells only) ==>										3			
# of Statistically Insignificant Trends (onsite wells only) ==>										10			
Average slope of significant trends at onsite wells (ppm/yr) ==>										-0.58			
Average slope of all trends at onsite wells (ppm/yr) ==>										-0.30			

Notes:

Min = minimum, Max = maximum, n = number of samples

BDL = below detection limit, C.L. = confidence level

For these calculations, values reported as equal to or less than one-half the highest detection limit were counted as BDL.

Wells MW-56 through MW-59 are offsite wells. All other wells are onsite wells.

**Table 4-3
Summary of Nitrate Trend Analyses - Simplot Terrace Site
Trend Analysis of Food Processing Land Application Sites in the LUBGWMA**

Sample Location	Data Set Statistics									Trend Analysis Results		Trend Direction	LOWESS Pattern
	Starting Date	Ending Date	Min	Max	Mean	Median	Skewness	n	% BDL	Slope (ppm/yr)	C.L.		
MW-14	Nov-88	Nov-01	9.0	38.9	24.3	23.5	0.029	52	0%	1.80	99%	Increasing	Increasing with some fluctuations
MW-15	Nov-88	Feb-98	6.2	17.3	10.4	10.0	0.775	35	0%	0.73	99%	Increasing	Increasing with some fluctuations
MW-22	Nov-88	Nov-01	10.3	32.4	23.1	22.1	-0.252	51	0%	1.38	99%	Increasing	Increasing with some fluctuations
MW-38	May-92	Nov-01	2.3	18.7	10.3	11.5	-0.426	38	0%	0.95	99%	Increasing	Increasing with some fluctuations
MW-39	May-92	Nov-01	12.5	37.2	20.8	18.2	0.646	39	0%	1.80	99%	Increasing	Increasing then decreasing
MW-40	May-92	Nov-01	7.9	23.8	15.0	14.9	0.279	39	0%	1.37	99%	Increasing	Decreasing then increasing
MW-51	Feb-96	Nov-01	9.0	20.1	16.7	18.7	-0.683	24	0%	1.68	99%	Increasing	Increasing then starting to level off
MW-52	Feb-96	Nov-01	10.7	32.2	24.3	26.2	-0.765	24	0%	2.25	95%	Increasing	Increasing then decreasing
MW-53	Feb-96	Nov-01	20.8	72.3	60.3	63.3	-2.361	24	0%	0.95	< 80%	No Significant Trend	Increasing then decreasing
MW-54	Feb-96	Nov-01	14.7	21.6	18.5	19.3	-0.181	24	0%	1.04	99%	Increasing	Decreasing, then increasing, then decreasing again
# of Increasing Trends ==>										9			
# of Decreasing Trends ==>										0			
# of Flat Trends ==>										0			
# of Statistically Insignificant Trends ==>										1			
Average slope of significant trends (ppm/yr) ==>										1.44			
Average slope of all trends (ppm/yr) ==>										1.39			

Notes:
 Min = minimum, Max = maximum, n = number of samples
 BDL = below detection limit, C.L. = confidence level
 For these calculations, values reported as BDL and those reported as equal to or less than one-half the highest detection limit were counted as BDL.

Table 4-4
Summary of Nitrate Trend Analyses - Simplot Expansion Site
Trend Analysis of Food Processing Land Application Sites in the LUBGWMA

Sample Location	Data Set Statistics									Trend Analysis Results		Trend Direction	LOWESS Pattern
	Starting Date	Ending Date	Min	Max	Mean	Median	Skewness	n	% BDL	Slope (ppm/yr)	C.L.		
MW-23	May-90	Nov-01	4.8	13.2	9.1	8.9	0.137	45	0%	0.25	99%	Increasing	Increasing, then decreasing, then increasing again
MW-24	May-90	Nov-01	3.8	12.3	7.7	7.4	0.064	43	0%	0.40	99%	Increasing	Increasing then decreasing
MW-25	May-90	Nov-01	3.5	13.8	7.6	7.4	0.476	44	0%	0.43	99%	Increasing	Increasing, then decreasing, then increasing again
MW-26	May-90	Nov-01	2.4	17.8	9.4	9.4	0.027	39	0%	0.94	99%	Increasing	Increasing, then decreasing, then increasing again
MW-27	May-90	Nov-01	2.6	13.4	6.9	7.0	0.473	38	0%	0.48	99%	Increasing	Increasing
MW-28	May-90	Nov-01	2.1	22.1	11.3	11.5	0.152	45	0%	1.16	99%	Increasing	Increasing
MW-29	May-90	Nov-01	1.7	11.0	6.6	6.5	0.002	46	0%	0.47	99%	Increasing	Increasing
MW-30	May-90	Nov-01	1.0	26.5	7.6	7.3	1.283	43	0%	0.67	99%	Increasing	Increasing then decreasing
MW-31	May-91	Nov-01	4.2	20.0	10.2	10.3	0.495	43	0%	0.58	99%	Increasing	Increasing then decreasing
MW-32	May-91	Nov-01	4.2	11.8	7.6	7.6	-0.079	43	0%	0.35	99%	Increasing	Increasing, then decreasing, then increasing again
MW-33	May-91	Nov-01	3.6	12.8	7.6	8.1	-0.218	42	0%	0.53	99%	Increasing	Increasing then beginning to level off
MW-34	May-91	Nov-01	4.0	24.5	8.1	7.2	2.646	43	0%	0.25	99%	Increasing	Increasing
MW-35	May-91	Nov-01	2.0	20.7	8.0	7.8	1.118	43	0%	0.46	99%	Increasing	Increasing then decreasing
MW-36	May-91	Nov-01	2.7	8.8	5.8	6.9	-0.194	43	0%	0.56	99%	Increasing	Increasing then beginning to level off
MW-37	May-91	Nov-01	1.0	37.2	8.4	5.7	2.152	41	0%	1.08	99%	Increasing	Increasing with fluctuations
MW-41	May-92	Nov-01	1.5	24.8	8.6	3.9	0.894	39	0%	2.02	99%	Increasing	Flat then increasing
MW-42	May-92	Nov-01	1.0	11.3	8.5	8.3	-2.089	36	0%	0.07	< 80%	No Significant Trend	Increasing, then decreasing, then increasing again
MW-43	May-92	Nov-01	2.1	9.4	5.5	5.7	-0.023	38	0%	0.75	99%	Increasing	Increasing then beginning to level off
MW-44	May-92	Nov-01	1.6	17.1	6.0	5.7	1.549	39	0%	0.40	99%	Increasing	Increasing, then decreasing, then increasing again
MW-55	Feb-96	Nov-01	12.1	19.8	17.0	17.4	-0.987	23	0%	0.80	95%	Increasing	Increasing then decreasing

# of Increasing Trends ==>	19
# of Decreasing Trends ==>	0
# of Flat Trends ==>	0
# of Statistically Insignificant Trends ==>	1
Average slope of significant trends (ppm/yr) ==>	0.66
Average slope of all trends (ppm/yr) ==>	0.63

Notes:

Min = minimum, Max = maximum, n = number of samples

BDL = below detection limit, C.L. = confidence level

For these calculations, values reported as equal to or less than one-half the highest detection limit were counted as BDL.

Table 5-1
Summary of Nitrate Trend Analyses - Hermiston Foods
Trend Analysis of Food Processing Land Application Sites in the LUBGWMA

Sample Location	Data Set Statistics									Trend Analysis Results		Trend Direction	LOWESS Pattern
	Starting Date	Ending Date	Min	Max	Mean	Median	Skewness	n	% BDL	Slope (ppm/yr)	C.L.		
MW-1	Apr-91	Dec-01	7.3	13.0	10.4	10.3	-0.145	36	0%	-0.12	< 80%	No Significant Trend	Increasing then decreasing then increasing
MW-2	Apr-91	Dec-01	0.8	16.6	7.9	7.6	0.864	34	0%	0.29	99%	Increasing	Increasing
MW-3	Apr-91	Dec-01	2.4	9.2	4.3	4.2	2.610	36	0%	-0.01	< 80%	No Significant Trend	Nearly flat
MW-4	Apr-91	Dec-01	0.6	8.1	5.8	6.0	-1.201	36	0%	0.29	99%	Increasing	Increasing
MW-5	May-97	Dec-01	4.5	13.0	7.6	7.3	1.497	18	0%	-0.01	< 80%	No Significant Trend	Nearly flat
MW-6	May-97	Dec-01	7.5	14.5	11.4	11.6	-0.677	18	0%	0.12	< 80%	No Significant Trend	Fluctuating but nearly flat, then increasing
# of Increasing Trends ==>										2			
# of Decreasing Trends ==>										0			
# of Flat Trends ==>										0			
# of Statistically Insignificant Trends ==>										4			
Average slope of significant trends (ppm/yr) ==>										0.29			
Average slope of all trends (ppm/yr) ==>										0.09			

Notes:

Min = minimum, Max = maximum, n = number of samples

BDL = below detection limit, C.L. = confidence level

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**Table 6-1
Summary of Nitrate Trend Analyses - A.E. Staley Site
Trend Analysis of Food Processing Land Application Sites in the LUBGWMA**

Sample Location	Data Set Statistics									Trend Analysis Results		Trend Direction	LOWESS Pattern
	Starting Date	Ending Date	Min	Max	Mean	Median	Skewness	n	% BDL	Slope (ppm/yr)	C.L.		
MW-1S	Aug-89	Nov-01	0.25	23.8	8.8	7.7	0.373	48	4%	1.41	99%	Increasing	Increasing
MW-1D	Aug-89	May-98	0.25	6.5	2.3	2.2	1.429	33	3%	0.28	99%	Increasing	Increasing
MW-2S	Aug-89	Nov-01	0.25	4.5	1.0	0.7	2.145	47	13%	0.06	99%	Increasing	Increasing
MW-3S	Aug-89	Nov-01	0.25	5.5	1.3	1.2	2.287	47	4%	0.10	99%	Increasing	Increasing
MW-3D	Aug-89	May-98	0.25	5.5	1.2	1.0	2.699	29	7%	0.03	80%	Increasing	Decreasing, then increasing
MW-4S	Aug-89	Nov-01	0.75	10.0	3.4	3.2	1.350	43	7%	0.28	99%	Increasing	Increasing
MW-5S	Aug-89	Nov-01	0.25	19.4	5.2	4.5	1.763	48	6%	0.56	99%	Increasing	Increasing, then leveling off
MW-6S	Apr-94	Nov-01	2.10	6.8	3.9	3.6	0.568	33	0%	0.39	99%	Increasing	Increasing
MW-E1S	Apr-94	Nov-01	2.20	8.0	4.9	4.8	0.151	33	0%	0.44	99%	Increasing	Increasing, then decreasing
MW-E2S	Apr-94	Nov-01	0.30	8.4	4.8	4.9	-0.069	33	0%	0.25	99%	Increasing	Increasing, decreasing, then leveling off
# of Increasing Trends ==>										10			
# of Decreasing Trends ==>										0			
# of Flat Trends ==>										0			
# of Statistically Insignificant Trends ==>										0			
Average slope of significant trends (ppm/yr) ==>										0.38			
Average slope of all trends (ppm/yr) ==>										0.38			

Notes:

Min = minimum, Max = maximum, n = number of samples

BDL = below detection limit, C.L. = confidence level

For these calculations, values reported as BDL and those reported as equal to or less than one-half the highest detection limit were counted as BDL.

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Table 7-1
Summary of Nitrate Trend Analyses - Snakcorp
Trend Analysis of Food Processing Land Application Sites in the LUBGWMA

Sample Location	Data Set Statistics									Trend Analysis Results		Trend Direction	LOWESS Pattern
	Starting Date	Ending Date	Min	Max	Mean	Median	Skewness	n	% BDL	Slope (ppm/yr)	C.L.		
MW-1	Nov-94	Nov-01	0.7	11.1	3.7	2.9	1.084	29	0%	-0.28	<80%	No Significant Trend	Decrease then increase
MW-2	Nov-94	Nov-01	6.8	16.3	10.5	10.6	0.660	29	0%	0.01	<80%	No Significant Trend	Increase then level off
MW-3	Nov-94	Nov-01	4.2	20.0	10.3	10.1	1.021	29	0%	-0.64	95%	Decreasing	Increase then decrease
MW-4	Aug-99	Nov-01	6.8	33.2	16.6	17.4	0.756	10	0%	-0.25	<80%	No Significant Trend	Increase then decrease
# of Increasing Trends ==>										0			
# of Decreasing Trends ==>										1			
# of Flat Trends ==>										0			
# of Statistically Insignificant Trends ==>										3			
Average slope of significant trends (ppm/yr) ==>										-0.64			
Average slope of all trends (ppm/yr) ==>										-0.29			

Notes:

Min = minimum, Max = maximum, n = number of samples

BDL = below detection limit, C.L. = confidence level

For these calculations, values reported as BDL and those reported as equal to or less than one-half the highest detection limit were counted as BDL.

Table 8-1
Summary of Trend Direction and Magnitude by Site
Trend Analysis of Food Processing Land Application Sites in the LUBGWMA

Site	# of Wells	Increasing Trends		Decreasing Trends		Flat Trends		Statistically Insignificant Trends		Average slope of trends (ppm/yr)		Average of Average Nitrate Concentrations at Each Well (ppm)
		#	%	#	%	#	%	#	%	Stat. Sig.	All	
Port of Morrow (Farm 1)	13	9	69%	1	8%	0	0%	3	23%	1.3	1.1	23.0
Port of Morrow (Farm 2)	9	9	100%	0	0%	0	0%	0	0%	2.5	2.5	33.6
L-W (North Farm)	10	5	50%	2	20%	0	0%	3	30%	1.5	1.1	24.2
L-W (Madison Ranches)	12	7	58%	0	0%	0	0%	5	42%	0.5	0.3	5.6
Simplot (Plant Site)	19	2	11%	4	21%	3	16%	10	53%	-0.6	-0.3	9.5
Simplot (Expansion Site)	20	19	95%	0	0%	0	0%	1	5%	0.7	0.3	8.4
Simplot (Terrace Site)	10	9	90%	0	0%	0	0%	1	10%	1.4	1.4	22.4
Hermiston Foods	6	2	33%	0	0%	0	0%	4	67%	0.3	0.1	7.9
Staley	10	10	100%	0	0%	0	0%	0	0%	0.4	0.4	3.7
SnakCorp	4	0	0%	1	25%	0	0%	3	75%	-0.6	-0.3	10.3
Totals by Well	113	72	64%	8	7%	3	3%	30	27%			

Steepest Decreasing Trend At A Well = -2.9 ppm/yr
Steepest Increasing Trend At A Well = 6.9 ppm/yr